

Amendments to the Specification:

Please amend the specification by inserting a new section before the "Technical Field" with the following amended paragraph:

This application is a divisional of United States Patent Application No. 09/356,808, filed July 20, 1999, now U.S. Patent No. 6,306,012.

Please replace the paragraph beginning on page 5, line 15, with the following rewritten paragraph:

In one particular application, separating the regions of the front face of the substrate assembly from the abrasive particles involves dissolving the lubricant-additive into a non-abrasive solution to form the lubricating planarizing solution, and then depositing the lubricating planarizing solution onto the polishing pad as the substrate assembly moves relative to the polishing pad. The lubricant-additive can be glycerol, polyethylene glycol, polypropylene glycol, ~~CARBOGEL~~ CARBOPOL® (which includes homo- and copolymers of acrylic acid crosslinked with a polyalkenyl polyether) manufactured by B.F. Goodrich, polyvinyl alcohol, POLYOX® (which includes ethylene oxide polymers) manufactured by Union Carbide, or some other lubricating liquid. The concentration of the lubricant-additive in the non-abrasive solution is selected so that the lubricating planarizing solution has a viscosity of at least approximately 4-100 cp, and more generally 10-20 cp. In operation, the lubricating planarizing solution provides a protective boundary layer between the front face of the substrate assembly and the abrasive planarizing surface to inhibit the fixed abrasive particles from overly abrading the substrate assembly. Thus, compared to planarizing solutions without the lubricant-additive, the lubricating planarizing solution is expected to reduce defects and scratches on the front face of the substrate assembly in fixed-abrasive planarization.

Please replace the paragraph beginning on page 7, line 20 with the following rewritten paragraph:

The lubricant-additive 160 is a separate solution or dry chemical compound that increases the viscosity of the non-abrasive solution 150 without altering the chemical effects of

the non-abrasive solution 150 on the substrate assembly 12 during planarization. The lubricant-additive 160 can be glycerol, polyethylene glycol, polypropylene glycol, polyvinyl alcohol, ~~CARBOGEL®~~ CARBOPOL® manufactured by BF Goodrich, or POLYOX® manufactured by Union Carbide. It will be appreciated that the lubricant-additive 160 may be composed of other lubricants suitable for contact with the substrate assembly 12.

Please replace the paragraph beginning on page 7, line 28 with the following rewritten paragraph:

The lubricant-additive 160 is combined with the non-abrasive solution 150 to make a lubricating planarizing solution 170. The concentration of the lubricant-additive 160 in the non-abrasive solution 150 is generally selected so that the lubricating planarizing solution 170 has a viscosity of at least approximately 4-100 cp, and more preferably 10-20 cp. The particular composition of the lubricating planarizing solution 170 will generally depend, at least in part, upon the type of abrasive particles in the pad, the shape of the raised features on the pad, and the types of material on the substrate assembly 12. The lubricating planarizing solution 170 can include the following ranges of non-abrasive solution 150 and lubricant-additive 160: (A) 90%-99.9% ammonia and water, and 0.1-10% POLYOX® or ~~CARBOGEL~~ CARBOPOL®; or (B) 80%-95% ammonia and water, and 5-20% glycerol, polyethylene glycol or polypropylene glycol. The following compositions of lubricating planarizing solutions 170 are thus offered by way of example, not limitation:

Please replace the paragraph beginning on page 8, line 14 with the following rewritten paragraph:

0.25% weight POLYOX®

Please replace the paragraph beginning on page 9, line 2 with the following rewritten paragraph:

0.25% weight ~~CARBOGEL~~ CARBOPOL®